

COLUMBIA BASIN PIT-TAG INFORMATION SYSTEM

9008000

SHORT DESCRIPTION:

Develop, operate, maintain, and enhance a long-term Columbia River Basin database on PIT Tag information and provide operations and maintenance support for the collection of PIT tag information at PIT tag interrogation sites.

SPONSOR/CONTRACTOR: PSMFC

Pacific States Marine Fisheries Commission
Carter Stein, PTAGIS Program Manager
45 SE 82nd Dr. Ste. 100, Gladstone, OR 97027-2522
503/650-5400 carters@psmfc.org

SUB-CONTRACTORS:

Columbia River Inter-Tribal Fish Commission may be subcontracted.

GOALS

GENERAL:

Monitoring

WATERSHED:

Research, M&E

ANADROMOUS FISH:

Research, M&E

NPPC PROGRAM MEASURE:

5.0F.10

RELATION TO MEASURE:

This is a monitoring activity.

BIOLOGICAL OPINION ID:

NMFS BO RPA Sec. 13

TARGET STOCK

None for this project

LIFE STAGE

MGMT CODE (see below)

AFFECTED STOCK

None for this project

BENEFIT OR DETRIMENT

BACKGROUND

Hydro project mitigated:

None for this project.

Project is an office site only

Habitat types:

None for this project.

HISTORY:

Responsibility for the operations and maintenance of PIT tag equipment, and maintenance of the PTAGIS database were transferred from a BPA contract with NMFS to a BPA contract with PSMFC in 1990. The program has grown significantly in the last 5 years. It is expected to grow even more in the next five years as the Mid Columbia PUDs increase the use of PIT tags, as the Lower Columbia River projects come on-line, and as adult detection and other smolt monitoring (trawl nets, flat plates, etc) are integrated into the system.

BIOLOGICAL RESULTS ACHIEVED:

Project has and will continue to provide critical information on survival and travel time of salmonids. These data and information are used by BPA, the Corps, and NMFS to assess the operational and construction effects of the Federal hydropower system on salmonids and by resource agencies and tribes to generate essential life history data and information on various populations of

fish.

PROJECT REPORTS AND PAPERS:

Quarterly and Annual reports addressing tagging and data entry protocol, data source input specification document, Maintenance and Operations Standard Operating Procedures, monthly PTAGIS News Letter, and Workshop reports as required.

ADAPTIVE MANAGEMENT IMPLICATIONS:

The data and information generated by this program are an essential and critical database for the regions fishery managers and researchers and water managers and developers to use in the development and refinement of management plans and strategies for salmonids and water management in the Columbia River Basin.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

To continue to provide high quality PIT tag data and information. This means 99.5% database and interrogation system up-time availability as measured at the peak of the out-migration season. In addition, we monitor interrogation system coils to provide at least 95% cumulative detection efficiency over the out-migration season.

CRITICAL UNCERTAINTIES:

The ability to collect PIT tag interrogation information is dependent upon the ability of the US Army Corps of Engineers to operate the juvenile fish bypass systems. When electrical power is disrupted, PIT tag interrogation equipment cannot operate. When telecommunication is disrupted, data transmission is delayed. The operations and maintenance capability is being designed to allow near-real-time problem detection and resolution.

BIOLOGICAL NEED:

This is a technical database and electronic system monitoring project - biological impacts should be directed to biologists involved in PIT tag marking projects (see Related BPA Projects, above).

HYPOTHESIS TO BE TESTED:

This is a monitoring and data collection project.

ALTERNATIVE APPROACHES:

This is a monitoring and data collection project.

JUSTIFICATION FOR PLANNING:

This is a monitoring and data collection project.

METHODS:

There are three main components to this project. 1) Database and data system support; 2) Interrogation system operations and maintenance; 3) coordination. The database and data system support activities are either automated production or software systems development. The data are made available to all parties, on a daily basis, via the internet, world wide web (WWW) interface or through a 'dial-up' application program. The interrogation system operations and maintenance functions are seasonal and described in the PIT Tag Interrogation System Standard Operating Procedures document. The project serves as a focal point for the communication of technical and PIT tag system related information. In addition, this project coordinates an annual forecast of PIT Tag requirements for related projects.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase	Start 1/1/98	End 2/28/99	Subcontractor No
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Task 1. New interrogation systems to be installed at John Day (1997).2. New interrogation systems at Bonneville (1998-2000).4. Transition to new ISO tag frequency (134.2 kHz) Spring 1998.5. Operational support for separation by code (1998-1999).6. Adult interrogation prototype in fish ladders (1998).

Implementation Phase **Start** 10/1/94 **End** 12/1/99 **Subcontractor** Yes

Task Transition support for New Tag Frequency

Implementation Phase **Start** 3/1/98 **End** 12/1/02 **Subcontractor** Yes

Task Interrogation at adult fish ladders.

Implementation Phase **Start** 3/1/96 **End** 12/1/98 **Subcontractor** Yes

Task Operational Support for Separation by Code

Implementation Phase **Start** 1/1/99 **End** 3/1/99 **Subcontractor** Yes

Task Bonneville PIT Tag system Installation

Implementation Phase **Start** 6/1/97 **End** 1/1/98 **Subcontractor** No

Task Transition to new ISO tag system (database and software support)

Implementation Phase **Start** 10/1/97 **End** 12/1/97 **Subcontractor** Yes.

Task New interrogation systems to be installed at John Day (1997).

O&M Phase **Start** 1990 **End** ? **Subcontractor** Yes

Task Coordination / Management and Planning

O&M Phase **Start** 1992 **End** ? **Subcontractor** Yes

Task Interrogation System Operations and Maintenance

O&M Phase **Start** 1990 **End** ? **Subcontractor** Yes

Task Database Development & PC Tools Support

PROJECT COMPLETION DATE:

On-going.

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Policy decisions determine the relative importance of any of the activities described above. This plan is also assuming that Bonneville Power Administration will continue to be the primary contractor for the development of system components and deployments required for the change to the New ISO FDX-B based PIT tag interrogation system, rather than this project.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

This question is not applicable. This is a technical monitoring and data collection project.

Present utilization and conservation potential of target population or area:

This question is not applicable. This is a technical monitoring and data collection project.

Assumed historic status of utilization and conservation potential:

This question is not applicable. This is a technical monitoring and data collection project.

Long term expected utilization and conservation potential for target population or habitat:

This question is not applicable. This is a technical monitoring and data collection project.

Contribution toward long-term goal:

This question is not applicable. This is a technical monitoring and data collection project.

Indirect biological or environmental changes:

This question is not applicable. This is a technical monitoring and data collection project.

Physical products:

This question is not applicable. This is a technical monitoring and data collection project.

Environmental attributes affected by the project:

This question is not applicable. This is a technical monitoring and data collection project.

Changes assumed or expected for affected environmental attributes:

This question is not applicable. This is a technical monitoring and data collection project.

Measure of attribute changes:

This question is not applicable. This is a technical monitoring and data collection project.

Assessment of effects on project outcomes of critical uncertainty:

If collection of PIT tag information at a facility cannot be performed, the project will focus its resources on the collection of PIT tag information at other projects.

Information products:

Various tagging, release, recapture, mortality and interrogation data are available from the PTAGIS database via the internet or World Wide Web or from the dial in user interface. In addition, various user manuals, system codes, specifications documents and newsletters are published and distributed to system users upon request.

Coordination outcomes:

This project is an information/data management and equipment installation, maintenance and operations project. These products are for the next (and typical) fiscal year: 1. Fully functional detection facilities at selected Corps and Bureau of Reclamation dams. 2. Collection and validation of PIT Tag observation data (from Lower Granite juvenile, experimental and adult facilities, Little Goose, Lower Monumental, McNary, Chandler Canal, John Day and Bonneville Dams on a daily basis throughout the juvenile out-migration season. 3. Collection and validation of PIT Tag tagging data, recapture data, volitional release data, mortality data and remote site interrogation data on a daily basis throughout the juvenile out-migration season. 4. Maintenance of detection equipment at specific Dams throughout the juvenile out-migration season. 5. Maximum eight hour problem resolution turn-around time throughout the juvenile out-migration season. 6. Timely and low cost procurement and distribution of PIT Tags to research organizations. 7. Deployment of interrogation data collection platform to provide foundation for more near real-time collection and distribution of observation data. 8. Effecting the necessary technology transfers developed under research contracts (New Fish Tag) to an operational action. 9. Affecting the the necessary coordination actions among users to ensure effective administration of contract objectives.

MONITORING APPROACH

This question is not applicable. This is a technical monitoring and data collection project.

Provisions to monitor population status or habitat quality:

This question is not applicable. This is a technical monitoring and data collection project.

Data analysis and evaluation:

Data collected by the PTAGIS project is made available to any organization. The project assumes that PIT tag marking projects will use the PTAGIS data in the analysis and evaluation of their marking projects.

Information feed back to management decisions:

Detailed PIT tag data is download from PTAGIS to various research organizations. These organizations have their own management decision making processes.

Critical uncertainties affecting project's outcomes:

Communication between related project entities will minimize the impact of critical uncertainties. The PIT Tag Steering Committee is an excellent forum to facilitate these policy level communications from the States and Tribes. Continued communications between PTAGIS and the National Marine Fisheries Service and US Army Corps of Engineers Planning and Operations groups is also necessary.

EVALUATION

1) Data provided are of the highest quality and integrity; 2) Data are made available near-real time; 3) Data is well documented and in the format required by the research community.

Incorporating new information regarding uncertainties:

Communication between related project entities will minimize the impact of critical uncertainties. The PIT Tag Steering Committee is an excellent forum to facilitate these policy level communications from the States and Tribes. Continued communications between PTAGIS and the National Marine Fisheries Service and US Army Corps of Engineers Planning and Operations groups is also necessary. The community will provide direction for the PTAGIS project depending upon the uncertainties identified.

Increasing public awareness of F&W activities:

If the research community determines that the PTAGIS project should become involved in a public awareness effort, then plans and budgets can be made available to package this highly technical information into a format that is more easily understood by the public. Ideas may be development of educational video tapes, or real time display of PIT tags marking and interrogation data at juvenile fish bypass facility visitor centers.

RELATIONSHIPS
RELATED BPA PROJECT**RELATIONSHIP**

9602400 Gbd: Changes in Signs/Effects on Survival	PIT tag marking project
9701000 Pit Tag System Transition Formerly Known As Essential M&E Infrastructure - Pit Tag Monitor Procurement	Procurement of components of ISO FDX-B based interrogation system
8906500 Annual Fish Marking - Missing Hatchery Prod'n Groups	PIT tag marking project
9602004	PIT tag marking project
9102800 Monitoring Smolt Migration of Wild Snake River Sp/Sum Chinook	PIT tag marking project
9403400 Assessing Summer and Fall Chinook Salmon Restoration-- Snake River Basin	PIT tag marking project
8712700 Smolt Monitoring By Non-federal Entities	PIT tag marking project
8332300 Smolt Condition & Arrival Timing At Lwr Granite	PIT tag marking project
8331900 New Marking and Monitoring Techniques for Fish	R&D of deliverables deployed for interrogation and operation of PIT Tag interrogation systems
9102900 Supplementation and Survival of Fall Chinook in Snake River	PIT tag marking project
8812000	PIT tag marking project
Lower Snake River Compensation Program	PIT tag marking project
8909802 Idaho Salmon Supplementation	PIT tag marking project

8303500	PIT tag marking project
9602601	PIT tag marking project
9107300 Idaho Natural Production Monitoring and Evaluation 83-7(esa)	PIT tag marking project
9107200 Idaho Department of Fish and Game Sockeye Salmon Captive Broodstock Program	PIT tag marking project
8909800 Idaho Supplementation Studies (iss)	PIT tag marking project
9005200 Performance/Stock Productivity Impacts of Hatchery Supplementation	PIT tag marking project
9302900 Survival Estimation for Dam/Reservoir Passage	PIT tag marking project
9005500 Steelhead Supplementation Studies in Idaho Rivers	PIT tag marking project

RELATED NON-BPA PROJECT

Bonneville 1 & 2 Juvenile Fish Bypass Facility / US Army Corps of Engineers
 Nitrogen Gas Study / US Army Corps of Engineers
 The Dalles Survival Study / US Army Corps of Engineers

RELATIONSHIP

New PIT tag interrogation system
 PIT tag marking project
 PIT tag marking project

OPPORTUNITIES FOR COOPERATION:

PSMFC / PTAGIS project people currently work in cooperation with US Army Corps of Engineers, National Marine Fisheries Service, Bonneville Power Administration, Smolt Monitoring, State Agencies, Indian Tribes, Public Utility Districts, private research organizations, the Columbia River Basin PIT Tag Steering Committee and others on a daily and as-needed basis.

COSTS AND FTE

1997 Planned: \$1,387,000
1996 Unobligated: \$191,400

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$1,100,000			
1999	\$1,100,000			
2000	\$1,200,000			
2001	\$1,200,000			
2002	\$1,200,000			

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1990	\$329,268
1991	\$1,044,000
1992	\$875,267
1993	\$2,369,000
1994	\$1,304,556
1995	\$1,454,648
1996	\$2,069,096

TOTAL: \$9,445,835

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:

Idaho Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, National Marine Fisheries Service, US Army Corps of Engineers, U.S. Bureau of Reclamation, US Fish and Wildlife Service, Columbia River Inter Tribal Fish Commission, Columbia Basin Fish and Wildlife Authority, Fish Passage Center, Chelan County PUD, Portland General Electric, University of Washington, Oregon State University, Washington State University, University of Idaho, Biomark, Inc. Destron / Fearing, Inc. Chapman and Associates, Datamars S/A, Allflex USA, RF Engineering, Battelle, Pacific Northwest National Labs, PNUC, Direct Service Industries, Columbia Basin PIT Tag Steering Committee and others.

LONGER TERM COSTS:

Depending upon the extent of deployment of PIT tag interrogation systems at adult fish ladders, public awareness programs or inclusion of other non-planned activities, the project expects to maintain costs at the constant 1997 rate of \$1,200,000, after 2002.

1997 OVERHEAD PERCENT: 15%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

Overhead is 15% on Salaries, General Operating and Maintenance and Other Operating Expenses exclusive of capital items.

CONTRACTOR FTE: 5

SUBCONTRACTOR FTE: 2
